

## NOTES ON MESEMBRYANTHEMUM AND ALLIED GENERA

H. M. L. BOLUS

**Conophytum stevens-jonesianum** L. Bol. sp. nov. (*Cataphracta*).—Plantae 3 visae, 5—8 cm. diam., medio ad 2 cm. alto; vaginae persistentes anni prioris, subrubre brunneae, inferne longitudinaliter plicatae, apicibus planis circumscissis; corpuscula late obconica, viridia, apice punctato, punctis saturate viridibus, in siccis fere albis, ore depresso, 2 mm. longo, fossis terminalibus profundissimis, ad 1 cm. longa diametroque; pedunculi 4—5 mm. longi; bractae basales, obtusissimae vel subtruncatae, ca. 1.5 mm. longae, lobis vaginam aequantibus, sinu lato; receptaculum subglobosum, ad 2 mm. diam.; calyx herbaceus, sat conspicue papillatus, rubre brunneus, 4 mm. longus, tubo 2 mm. longo, segmentis obtusis, subaequilongis, marginibus angustissimis; corolla ad 8 mm. longa, tubo albo, 4 mm. longo, segmentis ca. 18, ca. 3-seriatis, laxis, obtusis vel acutis, cupreis, saepius ad 0.5 mm. latis; stamina pauca, e parum supra basim corollae adnata, 3—4-seriata, fere omnia exserta, filamentis albis, antheris primum fere ad 2 mm. longis, polline luteo; discus conspicuus, e segmentis ca. 10, truncatis compositus; ovarium late conice elevatum, altitudinem disci attingens vel leviter excedens; stylus nullus; stigmata 4, ad 2.5 mm. longa.

Cape Province; Namaqualand; Anenous Pass, June 1962, *H. Hall* 2432. N.B.G. 577/62. Fl. Apr. 1964.\*

Mr. Hall writes: "This locality is the new Anenous Pass which follows the track of the defunct railroad through those mountains. It is several miles from the old Pass. I have explored the almost bare granite slopes of this Pass many times, but had never seen this species before 1962. An unusual feature is the manner in which the old skins rupture so neatly around the rim and readily lift off, rather like the metallic tops of milk bottles! No other member of the *Cataphracta* known to me sheds its old skins in this manner. The flowers even at midnight are not fully expanded."

This species is named after Mr. W. Stevens-Jones who has shared Mr. Hall's devotion to this genus for many years.

The following "Notes", which appeared in October 1958 in *The Cactus and Succulent Journal of Great Britain* (Vol. 20: 82—85), are being reprinted here with the gracious assent of the two Editors, Mr. E. Shurly and Professor H. B. Rycroft. In this way they will be included in the series of "Notes" which have been published continuously in this Journal since July 1959, and which are destined to form a fourth part of the work bearing the title given above.

---

\*NOTE: The type specimens are in the Bolus Herbarium, University of Cape Town, Rondebosch.

By the courtesy of the Director of the Botanical Department of the Royal Natural History Museum in Stockholm, I have recently had the privilege of examining the one hundred and thirty-five sheets of *Mesembryanthemaceae* in the Sonder Herbarium at Stockholm. Among them is a single plant of the type of *M. fimbriatum* Sond., published in 1862 (Flor. Cap. 11:393), collected by Zeyher near the Gamka River in May, 1840, when he and Burke, who also got it, were on an expedition to the north together. This I had not seen before and it was a great moment, after some fifty years of making notes on members of this Family, when I immediately recognised it as being an early stage in the season's growth of *M. pygmaeum* Haw., published in 1819 and now known as **Ruschia pygmaea** (Haw.) Schwaat. The mists that have obscured *Conophytum fimbriatum* (Sond.) N. E. Br. since 1922, when the new combination was made, were cleared away and with them vanished this combination, which proves to have been based on a plant quite distinct from *M. fimbriatum* Sond. N. E. Brown writes (Gard. Chron. 1922, p. 214); "The gland-dotted flowers distinguish this from any other species (of *Conophytum*) known to me. Sonder describes the species as glabrous, from specimens collected by Zeyher. I have not seen Zeyher's specimens, from which Sonder described, but as Burke and Zeyher travelled together, and in most cases collected the same species, the specimens collected by Burke at the same locality are probably identical with those of Zeyher and are decidedly minutely puberulous, as in Zeyher 693, which Sonder wrongly quotes as being *M. minutum* Haw." The fact that both Zeyher 693 and Burke are quoted in his description proves that Brown considered them identical, but there seems to be no justification for thinking these two corresponding collections are "probably identical" with the glabrous type of *M. fimbriatum* Sond. I have not seen Burke's specimens and the one plant of Zeyher 693 in the Sonder Herbarium is devoid of flower and fruit. It appears to me to be much more than "minutely" puberulous, suggesting a drought-stricken form of an undescribed pubescent **Gibbaeum** rather than of a **Conophytum**.

Burke, in his "Journal," published in 1845 in Hooker's London Journal of Botany (Vol. IV: p. 648), writes of their sufferings in the severe drought then prevailing and says "No vegetation could be described but a scanty growth of *Mesembryanthema*." (Burke gives June 28th as the day spent at "Gamtka.") Whatever further research may reveal regarding the genus of this intriguing plant, it will require a new specific name, unless it turns out to be a species already described. In the present uncertainty, it seems best to regard it as insufficiently known both generically and specifically, until some enthusiast is urged to make a special search for it and succeeds in finding it.

It may be noted here that Marloth's amended description of *M. fimbriatum* Sond., published in the Transactions of the Royal Society of South Africa (Vol. I: 406) refers wholly to a collection of **Conophytum saxetanum** N. E. Br. from

Luderitzbucht—a far cry to the Gamka River, which rises in the Nieuwveld Mts. near Beaufort West, and follows a course between this town and Prince Albert before it joins the tributaries to form the Gouritz River flowing south into the Indian Ocean.

It also took us a long time in South Africa to discover the whole of *Ruschia pygmaea*, whose history may be briefly given. It was raised at Kew in 1818 from seed sent by Bowie, its first recorded collector, but never flowered, and all we know of the type consists of Haworth's description and an unpublished coloured drawing in the Kew Herbarium representing vegetative growth, which, allowing for differences due to cultivation, matches the wild material at this stage of its growth. Haworth considered it was nearest *M. mucronatum* Haw., and the two species are still correctly maintained in the section *Microphylla*. The next collections were those of Burke and Zeyher (Zeyher's is the only one quoted by Sonder for *M. fimbriatum*), lacking any remains of flower or fruit of the previous year's growth. Burke's is in the state of complete rest and in Zeyher's the young growth is still enclosed in the resting sheath, but just visible through the gaps of the latter's deeply "lacerate-fimbriate" upper portion. Then Rehmann got it in the same condition as Burke's in the Karoo, north of the Hex River Pass, so that up to this date neither flower nor fruit was recorded. It was only in August, 1905, when the British Association met in South Africa for the first time, that one of its members, R. H. Yapp, found it growing freely at Matjesfontein in full flower. Later, to complete the cycle, fruiting specimens were obtained in the same locality. It is fervently hoped that it will take a much shorter time to determine, from complete living material, the genus of Zeyher 693.

Another type collected by Zeyher and seen for the first time, *M. monticolum* Sond., also discloses an error—in this case my own. For *M. bifoliatum* L. Bol., described in 1922, from what we now know to have been merely an early stage of the inflorescence, is identical with a corresponding portion of the type, which is represented by a flowering branch with only a short inflorescence and a few of the basal foliage leaves. When complete plants of several years' growth were collected by H. Hall at Komkans in Namaqualand in 1954 and 1955, and could be identified with the type, there was great joy among us. For in the interval, about a century, between the two dates (Zeyher died in 1858) no other complete collection had been recorded, and its curious inflorescence, unique in this Family, was fully revealed for the first time. This character alone justifies its having been raised to generic rank and been worthily called *Otto-sonderia*\* after Dr. Otto Wilhelm Sonder, who was courageous enough to

---

NOTE: The type specimens of all new species described in this paper are in the Bolus Herbarium, University of Cape Town, Rondebosch, except that of *Drosanthemum insolitum* which is in the Royal Natural History Museum, Stockholm.

\* Mesem. 111: 292

undertake the task of bringing Haworth's work up to date for the Flora Capensis, as far as this could be done with usually dried material only at his disposal, and the many insufficiently known species and confusion of names that existed to perplex him. The illustration shows how the inflorescence continues to branch year after year, the normal pattern being one flower to a branchlet with a bud in each axil for the next year's growth. If, therefore, all the flowers developed normally (without abortion or insect-raid) the second year's growth of the original axillary buds would be two flowers and the third year's four flowers and so on. After several years the branching inflorescence becomes a rigid cyme shaped like an upside-down pyramid.

In the same year as his rediscovery of *Ottosonderia monticola*, a second species, *O. obtusa*, was discovered by H. Hall farther north at Walle Kraal. Both species have flowered at Kirstenbosch.

Another puzzle solved in revising the Sonder Herbarium deals with Ecklon 2069, collected between "Hauwhoek and Caledon" in 1858 and represented by one plant. Sonder writes of it: "In habit very near *M. micans*," but identifies it with *M. hispidum* L.—now *Drosanthemum hispidum* (L.) Schwant., which is a very different plant and quite unknown from the Caledon Division. Ecklon's label reads "flores crocei" (those of *D. hispidum* being rose-purple), and at a glance they may be recognised as belonging to the group of which *D. micans* (L.) Schwant. is the earliest known species. For the leaves and sepals are similar, yellow petals often occur in the section, and the black staminodes are as numerous and conspicuous as they are in *D. micans*. But instead of the branches and peduncles being rough, as they are in the rest of this section (*Aspericaulia*), they are distinctly hispid, though not so conspicuously as is usual in the section *Hispida*. Perhaps it was this character only which led to Sonder's placing it under *D. hispidum*. Another distinguishing mark to be observed is the globose shape of the papillae on the receptacle, these being elongated in all the other closely allied species. These two characteristics, and there are probably more to be seen in the living plant, separate it from all the other known species in the section having yellow petals and copious black staminodes and I, therefore, propose to describe it as *Drosanthemum insolitum*, the unusual *Drosanthemum*, because of its hispid branches and peduncles and its globosely papillate receptacle. The only plant seen is evidently flowering in its first year, judging by the slender root and the absence of any remains of a previous year's growth, and it is less robust than *D. micans*.

*Drosanthemum insolitum* L. Bol. sp. nov. (*Aspericaulia-Speciosa*).

Planta sicca unica visa, erecta gracilis, laxa ramosa, 15 cm. alta; folia erecta vel ascendentia, apice recurva, crebre et sat inconspicue papillata, 1—1.4 cm. longa, ad 2 mm. diam.; pedunculi hispidi, 3—7 cm. longi; sepala subaequalia, 5 mm. longa; petala "crocea," ad 1.6 cm. longa, ad 2 mm. lata; staminodia



atrata conspicua crebra, stamina pallida aequantia vel paullo superantia—cetera non examinata.

Cape Prov.; in dit. Caledon; inter Houw Hoek et Caledon, Nov. 1858. *Ecklon* 2069.

**Cephalophyllum vanheerdei** L. Bol. sp. nov. This genus, containing more than sixty species, of which two at least are among the plant-aristocrats in that their names were written by the great Linnaeus in the book “*Species Plantarum*,” where plants in 1753 were given a double name (generic and specific) for the first time in the history of botany. Some of the most beautiful of the flowers in this vast Family are to found in this genus, and the present species, named after its discoverer, P. van Heerde, may take its place in the front rank. There is probably no one today who knows Namaqualand and its flora in the same way as Mr. van Heerde does. For he has lived in the very heart of it, at Springbok, nearly all his life, making frequent excursions into remote and less known areas, collecting, distributing and growing a very large number of species—many of these new. The genus **Vanheerdea** is named after him (I regret having misspelt it in the first instance *Vanheerdia*).

The inflorescence of *C. vanheerdei* is copiously branched and a plant with its procumbent branches, each terminating in as many as sixteen flowers, and a prospect of more to come, must be a beautiful sight. One branch only was received, with immature fruit, buds in all stages and fully developed flowers. One of the buds opened in water and, on the second day of opening, measured 10 cm. in diameter, except for **C. spongiosum** which attains a diameter of 11·5 cm. in cultivation, the largest flower hitherto recorded in the genus. The petals, one series or with two or three interior ones a little shorter in addition, are laxly set, having a slight gap between them, and are a clear bright yellow throughout. In habit of growth it is among the more robust species, but much less rigid than **C. cupreum** and the giant **C. spongiosum**.

Ramus floriferus cum floribus 21 cm. longus, internodiis 1·5—2 cm. longis, ad 7 mm. diam., decumbens, compactus ob gemmas axillares bene evolutas; folia saepius erecta, matura subteretia, supra plana vel superne leviter convexa angustataque, lat. visa apice rotundata, glauce viridia, levia, 3—8·5 cm. longa, 5—10 mm. diam.; inflorescentia laxa 4-ramosa, 16-flora; pedunculi inferne patentes, superne sursum curvati, 3—6·5 cm. longi; bractae 2—2·5 cm., rarissime ad 4·5 cm., longae, vagina ad 1 cm. longa; receptaculum breviter crateriforme, ad 4 mm., longum, ad 1 cm. diam; sepala 5, exteriora superne subulata, obtusa, interiora apice compressa, 1—1·7 cm. longa, basi 4—6 mm. lata; petala 1—3-seriata, laxa, interiora pauca, inferne e medio angustata, obtusa vel inconspicue emarginata, laete lutea, saepius 4—5 cm. longa, 2—3 mm. lata; filamenta aurea, 3—6 mm. longa, antheris pollineque pallidis;

ovarium supra per 2 mm. gradatim elevatum, lobis apicem versus compressis; stigmata 11—12, 4 mm. longa.

Cape Province; Namaqualand; "on one of the Umdaus ridges, about 15 miles on the Steinkopf-Klipfontein Rd.," Jul. 14, 1958, *P. van Heerde* (Bolus Herbarium 26574).

Another interesting plant collected by H. Hall in Sept., 1955 at Komkans is *Cephalophyllum primulinum*, growing "on muddy banks in small river bed; flowers pale yellow." This is the only record since the type was collected in 1910 by Pearson and Pillans on one of the Percy Sladen Memorial Expeditions which yielded so many new discoveries. It was still growing freely in Mr. Pillan's garden twelve years later, when the description was made. Mr. Hall's specimens were, therefore, the first wild ones I had seen.

We often think there is as much, or even more, of a thrill in rediscovering old species, or completing the descriptions of the insufficiently described ones, than in discovering new ones. At any rate, yesterday (Aug. 9th) was a red letter day when Mr. Hall brought a flowering branch with one flower of *Schlechteranthus maximiliani* Schwant., described without flowers, from a plant he got at Oograbies, about twelve miles east of Port Nolloth, not far from the type locality. This so exactly matched the portion of the type Dr. Schwantes had presented to the Bolus Herbarium that we felt confident the determination was correct, and Mr. Hall set himself in earnest to induce it to flower, placing plants in different parts of the garden in the hope of finding the most suitable conditions. He at last saw indications of the earliest signs of a flower-bud and for several weeks has carefully guarded it from pests and other accidents. Indeed it proved to be only a tiny modest mouse after such a mountain of labour, but precious and cherished because of its interest to science. The following notes were made; flower solitary with no indication of a bud in the axils of the bracts, in general appearance closely resembling a typical *Ruschia* flower: peduncle 5 mm. long, compressed in the lower part which is enclosed in the leaf sheath, bracteate in the middle; bracts unlike the leaves in appearance, concave on the upper surface and clasping the peduncle, margins membranous rose, 6 mm. long, the sheath 3 mm.; receptacle cyathiform (long cup-shaped), 4 mm. long, 2.5 mm. in diameter; sepals 6, the sixth aborted and chiefly consisting of a membrane (probably the normal number is 5), 2.5—4 mm. long; petals in one series, arranged in five groups (as often occurs in *Ruschia*), not narrowed downwards, obtuse purple-rose, 5 mm. long, up to 0.5 mm. broad; staminodes appressed to the conically collected stamens and slightly exceeding them, acute, purple-rose; stamens rather few, filaments pallid in the lower part, deep rose in the upper, papillate a little above the base; nectary annular, rather inconspicuous, denticulate; ovary semi-globosely elevated, the lobes convex; stigmas 9, very narrowly subulate, brownish purple at the apex, 1.5 mm. long; capsule 10-locular.

**Conophytum intermedium** L. Bol. sp. nov. (*Derenbergia-Saxetana*). Plantae plures visae, e 12—20 corpusculis compositae; vaginae persistentes papyraceae, inferne politae pallideque brunneae; corpuscula obovate cuneata, leviter compressa, supra visa elliptica, levia, glabra sinon circa orem inconspicue ciliata, pallide viridia, inconspicue sparse punctata, 1—1.5 cm. longa, prope apicem 5—7 mm. diam., lobis 0.5—1.5 mm. longis, divergentibus, marginibus carinisque interdum rubre lineatis; pedunculus ad 9 mm. longus; calyx non bene visus, marcescens, segmentis 4 (?) subaequilongis; corolla 5—7 mm. longa, segmentis 1—2-seriatis, obtusis vel rarius acutis, rubre cupreis, 1.5—2 mm. longis, ad 0.5 mm. latis; stamina 11—13, 2-seriata, omnia exserta, antheris luteis, 1 mm. longis, apicem corollae fere attingentibus; discus conspicuus, segmentis ca 9—12, obtusis; ovarium concavum, medio tantum conice elevatum; stylus 1 mm. longus; stigmata 4, apicem corollae attingentia vel rarius superantia, saepius ad 4.5 mm. longa.

Cape Province; Namaqualand; Richtersveld, Noisabis, Mart. 1958, *H. Hall* 1324. Fl. Maio 6—26th, 1958, Kirstenbosch, N.B.G. 123/58.

Sic nominatum quia corpuscula subgenus *Derenbergia* simulantia, et flores *Euconophytum* simulates, itaque inter haec subgenera intermedium est.

**Lithops hillii** L. Bol. sp. nov. (*Fenestratae-Arubrae*). Planta e corpusculis pluribus composita; corpuscula late obconica, 1.8—2.2 cm. longa, apice, cum rima per 4—5 mm. divergente, 1.9—2.1 cm. diam., lobis 5—9 mm. longis, basi 1—1.2 cm., apice 1.5—1.7 cm. latis, lateribus saturate columbine griseis, fenestra convexa, “insulis” paucis, leviter prominentibus, griseis, punctisque sparsis minutissimis albis ornata, margine exteriori breviter irregulariterque laciniata, interiore integra, punctis sparsis vel aggregatis, minutis nigris ornata; pedunculus 1—1.5 cm. longus, in receptaculum 2—3 mm. longum, ad 5 mm. diam., insensim abeuns; sepala 5, papillata, superne leviter angustata, obtusa, omnia  $\pm$  marginata, inter minima in genere, 4—6 mm. longa, basi 2—3 mm., vel ad 4 mm., lata; petala 2—3-seriata, inferne e supra medium angustata, obtusa, laete lutea, prope basim alba, ad 1.2 cm. longa, ad 1.75 mm. lata; filamenta alba, ad 6 mm. longa, antheris luteis; ovarium supra planum; stigmata 5, 7 mm. longa.

Cape Province; Namaqualand, Stinkfontein, alt. ca. 3000 ped., Sept., 1956, *L. J. Hill* (Bolus Herb. 26575). Fl. hort. Hill, Maio 1958.

**L. geyeri** Nel proxime accedit, sed corpusculis brevioribus, diametro majore, floribus minoribus, petalis integris (eis *L. geyeri* conspicue emarginatis), ovarium supra planum (eo *L. geyeri* e margine ad medium gradatim ad 1 mm. elevato), differt.